



U.S. Department
of Transportation
**Research and
Special Programs
Administration**

400 Seventh St., S.W.
Washington, D.C. 20590

NOV 16 2000

Mr. Don McCorkle
Eagle Picher Technologies LLC
3220 Industrial Drive
Joplin, MO 64801

Ref. No. 00-0275

Dear Mr. McCorkle:

This is in response to your September 27, 2000 letter requesting clarification on the shipment of lithium-ion batteries under the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180). Specifically, you ask if the term "lithium content" applies to cells containing lithium nickel oxide and carbon which contain no lithium metal or lithium alloy.

The answer is yes. Lithium-ion batteries must be classed in accordance with § 173.185. If your batteries meet the exception provisions provided in § 173.185(b), they are not subject to the HMR. If not excepted, the other provisions of § 173.185 apply. The UN Recommendations for the Transport of Dangerous Goods has adopted a formula for determining equivalent lithium content for lithium-ion batteries in Section 8 8.3.3.2 that reads as follows:

Lithium content means the mass of lithium in the anode of a lithium metal or lithium alloy cell, which for a primary cell is measured when the cell is in an undischarged state and for a rechargeable cell is measured in terms of equivalent lithium content, which in grains is calculated to be 0.3 times the rated Capacity in ampere hours.

This formula may be used for determining the size of lithium-ion cells and batteries to be classed under the provisions of § 173.185.

I hope this satisfies your request.

Sincerely,

Delmer F. Billings
Chief, Standards Development
Office of Hazardous Materials Standards



00-0275

173.185

00-8215 Bat
Federal Systems Department
P.O. Box 47, Joplin, Missouri 64802-0047
(417) 623-8000

DEAR MR. MAZZULLO:

I AM WRITING FOR CLARIFICATION ON SHIPPING OF LITHIUM-ION CELLS AND BATTERIES. I HAVE A COPY OF YOUR LETTER TO MR. CHIP WILDES DATED APRIL 10, 1995. (SEE ATTACHMENT) BECAUSE OUR CELLS ARE NOT OF LITHIUM METAL OR LITHIUM ALLOY, I UNDERSTAND THAT THEY ARE CONSIDERED DRY CELLS AND ARE NOT SUBJECT TO THE HMR.

I ALSO HAVE A COPY OF THE RESPONSE TO MR. DAVE MCCULLOUGH REFERRING TO THE FORMULA THAT THE UN RECOMMENDATIONS FOR THE TRANSPORT OF DANGEROUS GOODS HAS ADOPTED FOR DETERMINING EQUIVALENT LITHIUM CONTENT FOR LITHIUM-ION BATTERIES. (SEE ATTACHMENT) SPECIFICALLY, I WOULD LIKE TO KNOW IF THE PARAGRAPH THAT GIVES THE DEFINITION OF LITHIUM CONTENT (RE; SECTION 38.3.3.2) PERTAINS ONLY TO LITHIUM METAL OR LITHIUM ALLOY CELLS, OR ARE CELLS THAT CONTAIN LITHIUM NICKEL OXIDE AND CARBON AND HAVE NO LITHIUM METAL OR LITHIUM ALLOY IN THEM NOW SUBJECT TO HMR? THE REASON FOR THE QUESTION IS BECAUSE OF THE DATES ON THE TWO LETTERS. SOME THOUGHT BECAUSE THE LETTER TO MR. CHIP WILDES WAS DATED 1995 THAT THERE COULD HAVE BEEN SOME CHANGES. A RESPONSE IN WRITING WOULD BE MUCH APPRECIATED.

THANK YOU FOR YOUR TIME AND EFFORT.

SINCERELY,

DON MCCORKLE
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3220 INDUSTRIAL DR.
JOPLIN MO. 64801

EAGLE EPICHER